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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: : February 14, 2006
Eser Kandogan et al. : Group Art Unit: 2635
Serial No.: 09/991,140 : Examiner: T. Edwards
Filed: November 16, 2001 : San Jose, California
Title: **APPARATUS AND METHOD USING COLOR-CODED OR PATTERN-
CODED KEYS IN TWO-KEY INPUT PER CHARACTER TEXT ENTRY**

APPELLANT'S APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

Appellants respectfully appeal the rejection of Claims 1-37. A Notice of Appeal was
timely filed on December 16, 2005.

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I. REAL PARTY IN INTEREST

The real party in interest is International Business Machines Corporation, Armonk, New York, assignee of 100% interest of the above-referenced patent application.

II. RELATED APPEALS AND INTERFERENCES

There are no other prior or pending appeals, interferences or judicial proceedings known to appellant, the appellant's legal representative, or assignee that are related to, directly affect or are directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-37 have been rejected by the Examiner. All of these claims are being appealed.

IV. STATUS OF AMENDMENTS

No amendment or response has been filed subsequent to the most recent rejection of September 20, 2005.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent Claim 1

The subject matter of Independent Claim 1, which is directed to "A method of electronically selecting language characters", is now described with respect to its three steps, designated here by the letters (a)-(c). Reference is made below to various figures in the filed application. Also, see p. 13, line 9 through page 14, line 5 of the specification.

(a) providing a keyboard that includes a plurality of keys, in which:

each of the numerals 0 through 9 inclusive is displayed on a respective one of the keys, each of at least 8 of the numeral-displaying keys further having language characters displayed thereon;

for each one of said 8 keys, a plurality of the characters displayed thereon have respective associated markings such that any given character marking on that key is uniquely identified with a single displayed character; and

a plurality of the keys display respective markings that visually match the character markings;

An example of one such keyboard is shown in Figure 10, which shows the various elements referred to in step (a). Each of the numerals 0 through 9 inclusive is displayed on a respective one of the keys, and 8 of these keys display language characters. Each of the language characters on these 8 numeral-displaying keys has a respective marking associated

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with it. Further, the keys themselves have markings (in this case, along their respective perimeters) that visually match the markings of the language characters.

(b) selecting a first character displayed on a first one of said 8 keys, wherein the first character has a first marking, by first selecting the first key with a user's finger or stylus and then selecting a key displaying the first marking with the user's finger or stylus; and

Figure 3 outlines a preferred method for entering language characters (in this case, letters).

For each of the letters, the first key to be selected is shown in the middle column, and the second key to be selected is shown in the right hand column. For example, when selecting the letter "I", the first key selection is "4" and the second key selection is "6", in that order.

The letter "I" itself has a marking that corresponds to the marking found along the perimeter of the "6"-key. Figure 13A shows how this two entry sequence can be made with a stylus.

(Note that reversing the sequence by first selecting "6" and then selecting "4" would correspond to the letter "M"; see Figures 3 and 13D.)

(c) selecting a second character displayed on the first one of said 8 keys, wherein the second character has a second marking, by first selecting the first key and then selecting a key displaying the second marking, in which the selected key displaying the first marking and the selected key displaying the second marking are different.

Step (c) is directing to selecting another language character "on the first one of said 8 keys", i.e., selecting a language character different from the one selected in step (b) but which nevertheless appears on the same key as the language character selected in step (b). For

example, if the letter "I" is selected in step (b), then the letter "H" could be selected in step (c).

Independent Claim 13

The subject matter of Independent Claim 13, which is directed to "A keyboard", is now described with respect to its three elements, designated here by the letters (d)-(f). Reference is made below to various figures in the filed application. Also, see p. 13, line 9 through page 14, line 5 of the specification.

(d) keys arranged in rows and columns, said keys forming a keyboard layout, a plurality of said keys having respective markings;

Figure 10 shows a preferred keyboard embodiment, in which the keys are arranged in rows and columns, and the keys have respective markings (in this case, along their respective perimeters).

(e) the numerals 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 displayed on respective ones of said keys; and

In Figure 10, each of the numerals 0-9 inclusive is displayed on a respective key.

(f) language characters displayed on said keys, each of at least 8 of said numeral-displaying keys having language characters displayed thereon, wherein, on each of said 8 keys, a plurality of said language characters have respective markings such that any given

marking on that key is uniquely associated with a single language character, and wherein said key markings visually correspond to said character markings.

In Figure 10, 8 of the numeral-displaying keys have language characters. On each of these numeral-displaying keys, each of the language characters has a respective marking that is uniquely associated with it. Further, the keys themselves have markings (in this case, along their respective perimeters) that visually match the markings of the language characters.

Independent Claim 24

The subject matter of Independent Claim 24, which is directed to “A method of electronically selecting letters”, is now described with respect to its two elements, designated here by the letters (g) and (h). Reference is made below to various figures in the filed application. Also, see p. 13, line 9 through page 14, line 5 of the specification.

(g) providing a keyboard that includes keys, the numerals 0-9 being displayed on respective keys organized in rows and columns, and letters of the English alphabet being displayed on numeral-displaying keys, wherein the letters displayed on any given key have different colors, and wherein keys of the keyboard are provided with letter-free regions having colors corresponding to the colors of the letters; and

Figure 10 shows a preferred keyboard to be used in implementing this method.

(h) selecting letters through a two-key sequence of a first key and a second key, in which the first key is given by the numeral-displaying key on which a desired letter is

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displayed, and the second key is given by a key provided with a letter-free region having a color that matches the color of the desired letter.

Figure 3 outlines a preferred two-key sequence method that can be used with the keyboard of Figure 10. As indicated in Figure 3, to select a desired letter, the first key to be selected is that one on which the desired letter is displayed, and the second key to be selected is given by a key having a color that matches the desired letter's color.

Independent Claim 25

The subject matter of Independent Claim 25, which is directed to "An electronic device", is now described with respect to its two elements, designated here by the letters (i) and (j). Reference is made below to various figures in the filed application. Also, see p. 13, line 9 through page 14, line 5 of the specification.

(i) a keyboard that includes keys, the numerals 0-9 being displayed on respective keys organized in rows and columns, and letters of the English alphabet being displayed on numeral-displaying keys, wherein the letters displayed on any given key have different colors, and keys of the keyboard are color-coded with colors corresponding to the colors of the letters; and

Figure 10 shows a preferred keyboard illustrating the various elements called out above.

(j) an electronic component in communication with said keyboard, said component registering which keys on said keyboard are selected, said component including instructions

for converting sequences of two keys into letters, wherein each letter is registered by first selecting the key on which the letter to be registered is displayed, and then selecting a key that is color-coded with a color matching that of the letter to be registered.

Figure 13 shows an electronic component in communication with the keyboard. A preferred set of instructions for converting key sequences into letters is given by Figure 3.

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VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-25 and 28-37 were rejected under 35 USC 103(a) as being unpatentable over US Patent 4,555,193 to Stone and further in view of WO 94/15431 to Novel et al. and US Patent 4,585,908 to Smith.

Claims 26 and 27 were rejected under 35 USC 103(a) as being unpatentable over Stone, Novel, and Smith, and further in view of US Patent 4,988,997 to Prame.

VII. ARGUMENT

Reference is made in this section to the Examiner's most recent Office action of September 20, 2005.

Applicants' arguments with respect to the rejection of specific claims is presented below under respective headings, in accordance with 37 CFR § 41.37 (c)(1)(vii).

However, Applicants believe it is essential to first give an overview of Stone (the primary reference relied upon by the Examiner) and, in general terms, to contrast Stone with Applicants' devices and methods.

Methodology and apparatus of the Stone reference

Stone discloses a keyboard having "keys subdivided into one or more fields" (see Abstract of Stone).

As explained by Stone in column 4, lines 44-61:

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The selection of the appropriate keys to obtain a particular character can be summarized as follows. A user will first look to the key upon which the desired character is printed. This key will be actuated by the user. If the desired character is printed in a color different from any of the background colors of the keys, no other key needs to be actuated. The actuation of the single key will cause the selected character to be printed on the display 30.

To obtain one of the other characters printed on a key, the user will look to the field of keys to which this key belongs to find the key having a background color identical to the color of the desired character. The field to which a key belongs is determined by position, orientation or some other visually obvious criterion. The other key is actuated concurrently with the key upon which the desired character is printed to select the desired character. (emphasis added)

The words "concurrent" and "concurrently" appear 25 times in Stone (including every independent claim). Because Stone relies on the principle of concurrent actuation, the number of symbols appearing on any given key depends on the position of that key in its respective field: Keys further to the left have more symbols, whereas keys further to the right necessarily have fewer symbols. This is clear from a careful reading of Stone, e.g., Figures 1-2 and column 4, line 64 through column 5, line 2:

...in the horizontal fields 12, 14, 16 the leftmost character on the key is selected by actuating the single key independently of any other. The second character is selected by concurrent actuation with the neighboring key to the right. The third character is selected by concurrent actuation with the key two positions to the right and so on.

For the same reason, the keyboard of Stone requires a greater number of colors to be used.

Note that in Stone's preferred embodiment "five background colors are used in the keyboard..."; see column 3, lines 28-29.

In particular, consider the field in Stone that is dedicated to numerals, shown in Figures 1 and 2 of Stone. Note that the number of numerals on the keys decreases as one

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moves along the row from left to right. The most leftward key 12a has four numerals ("1", "2", "3", and "4"), the key 12b to its immediate right has three ("5", "6", and "7"), the next key 12c has two ("8" and "9"), and finally the key furthest to the right 20d has just one ("0"). The methodology of Stone demands that the number of numerals on the keys must decrease in this fashion, since keys to the right are used for the purpose of disambiguation.

Note that if the most rightward key 20d were to have, for example, 4 numerals or symbols displayed on it, Stone's methodology would permit only one of these 4 to be selected (e.g., a symbol that was colored black), and that symbol could be chosen by simply selecting the key 20d, just as the blackened numeral "1" is selected by simply selecting the key 12a. However, Stone would not allow any of the other three symbols to be selected. This is because there are no keys to the right of the key 20d that can be used in combination with the key 20d to select additional symbols.

Stone cannot be applied to Applicants' embodiments

The preceding paragraph should be borne in mind when considering whether Stone can be applied to Applicants' embodiments. In this regard, it is helpful to consider the specific embodiment shown in Figure 10 of Applicants' specification. Note that each of the keys in the far right column of this layout displays the numerals "3", "6", and "9" along with at least 3 letters. There is no way that Stone's methodology, however, can be used to select each and every one of the alphanumeric symbols on these three keys, since there is no key to the right of the "3", "6", and "9" keys that can provide the needed disambiguation. Indeed, the same problem is evident for keys in the far left hand column and the middle column of

Figure 10. For example, the key bearing the numeral "4" displays 3 letters, but since there are only two keys to the right of the 4-key, the methodology of Stone would permit only 2 of them to be selected. Thus, the methodology of Stone simply can not be applied to Applicants' preferred embodiment of Figure 10.

Accordingly, standard telephone and cellphone keyboards may be used with Applicants' methodology, whereas the methodology of Stone can not be applied to these standard keyboards. This difference arises because Stone's concurrent actuation of keys requires that the key providing disambiguation be to the right of the key displaying the desired alphanumeric. In Applicants' invention, disambiguation is provided by a subsequently selected key that may, for example, lie to the left or to the right of the first selected key, or the first selected key itself may provide any needed disambiguation, thereby permitting more alphanumeric characters to be displayed on a given number of keys.

Claim 1

Applicants' Claim 1 is not specifically directed to a 3 x 3 matrix of keys, but the same problem with Stone discussed above argues against a rejection of Claim 1 that relies on Stone. In independent Claim 1, for example, there is a limitation directed to "each of at least 8" numeral-displaying keys having language characters thereon. Also, independent Claim 1 further stipulates that a particular two-key sequence is to be used, with this sequence being suggested by the color-coded or pattern-coded arrangement itself. Trying to apply Stone's methodology to any layout specified by the language of Claim 1 leads to problems with

disambiguation like those discussed above, because in general there will be at least a few keys with too many symbols.

With respect to the rejection of Claim 1, the Examiner has taken the approach of associating various elements in Claim 1 with respective references in the prior art, and then simply asserting that combining these references in some vague way leads to Applicant's claimed subject matter. However, one should consider, among other things, MPEP 2141.02, which requires that "The claimed invention as a whole must be considered".

What is missing from the Examiner's analysis is an attempt to properly understand Applicants' claimed subject matter as a combination. For example, the Examiner states on page 7 of his final Office action of September 20, 2005 that:

...it would have been obvious to use a 3x3 matrix keypad as a data input means in the suggested telecomputer communication system of Stone as taught by Novel because Stone states his data input method is suited for a pocket sized telecomputing system...

One problem with this analysis is that, as explained above, Stone simply does not work with a 3x3 matrix keypad of letters and language characters (such as those of Novel and Smith), since the methodology of Stone would not permit the language characters of such a 3x3 matrix keypad to be disambiguated. Indeed, the only embodiment disclosed in Stone shows 13 keys displaying alphanumeric characters.

While Claim 1 should be read in its entirety, note in particular the following limitation from step (b):

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selecting a first character displayed on a first one of said 8 keys, wherein the first character has a first marking, by first selecting the first key with a user's finger or stylus and then selecting a key displaying the first marking with the user's finger or stylus...(emphasis added)

That is to say, the user of the method of Claim 1 makes a key selection with his finger or stylus, and then uses the same finger (or stylus) to make another key selection. Note how this language is different from Stone, which as noted above requires that a two-key selection step involve the concurrent selection of two keys, i.e., Stone requires that two (different) fingers be used simultaneously. The device of Stone may or may not be usable with one hand, but it is certainly not usable with just one finger! Accordingly, Applicants' invention offers greater ease of use.

At another point on page 7 of his final Office action, the Examiner states that:

...Stone also, suggests the modification and rearranging of letter (sic), of his device, to suit a particular device...

The Examiner goes on to conclude from this that Applicants' invention is obvious.

However, that portion in Stone alluded to by the Examiner takes on a different meaning when read in its context. Column 6, lines 34-38 of Stone state that:

The invention being thus described, it will be obvious that the same may be varied in many ways. For example, the number and the location of the fields may be rearranged, and the lettering and coloring may be changed to

With respect to both the Novel and Smith references, Applicants further note that neither one discusses any disambiguation arrangement that relies on color-coded or pattern-coded keys. Indeed, Applicants are not aware of any prior art references that disclose sequential key input devices utilizing color-coding or pattern-coding. This in itself suggests that color-coding and pattern-coding in such devices is not obvious.

Claims 2 and 3

Claim 2 is directed to “selecting a third character displayed on the first one of said 8 keys, wherein the third character has a third marking, by first selecting the first key and then selecting a key displaying the third marking...”

As noted above in connection with Claim 1, Stone is not directed to sequential key selection and can not be made to work with sequential key selection.

Claim 4

Claim 4 is directed to a method “wherein each letter is selected by first selecting the key on which the selected letter is displayed, and then selecting a key displaying a marking that matches the marking of the selected letter”.

As noted above in connection with Claim 1, Stone is not directed to sequential key selection and can not be made to work with sequential key selection.

Claims 5-8

Claims 5-8 are directed to embodiments that include a 3 x 3 matrix of keys, which are consistent with standard telephone and cellphone keyboards (an example of which is shown in Figure 10), as opposed to the keyboard of Stone. As noted above in connection with Claim 1, the methodology of Stone can not be applied to these embodiments, and so an obviousness rejection is inappropriate.

Claim 9

Claim 9 is likewise directed to an embodiment that includes a 3 x 3 matrix of keys, which are consistent with standard telephone and cellphone keyboards (an example of which is shown in Figure 10), as opposed to the keyboard of Stone. As noted above in connection with Claim 1, the methodology of Stone can not be applied to these embodiments, and so an obviousness rejection is inappropriate.

Also, as noted above preceding the discussion of the rejection of Claim 1, there is no way that Stone's methodology can be used to select each and every one of the alphanumeric symbols on the "3", "6", and "9" keys, since there is no key to the right of the "3", "6", and "9" keys that can provide the needed disambiguation. (Note that the same problem is evident for keys in the far left hand column and the middle column of Figure 10, which is one example of the keyboard described by Claim 9. The key bearing the numeral "4" displays 3 letters, but since there are only two keys to the right of the 4-key, the methodology of Stone would permit only 2 of them to be selected.)

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Claim 10

Claim 10 is likewise directed to an embodiment that includes a 3 x 3 matrix of keys, which is consistent with standard telephone and cellphone keyboards (an example of which is shown in Figure 10), as opposed to the keyboard of Stone. As noted above in connection with Claim 1, the methodology of Stone can not be applied to these embodiments, and so an obviousness rejection is inappropriate.

Also, Claim 10 is directed to specific color-coded and pattern-coded arrangements (see page 13, line 9 through page 16, line 8 of the specification; see especially Figures 3 and 10). These particular arrangements are by no means arbitrary; rather, they complement certain preferred key entry sequence methodologies, which themselves were the subject of recently issued US Patent 6,765,556, which was based on an application having the same filing date, inventors, and assignee of the instant application. As noted on page 14, lines 2-5 of the specification of the pending application:

The coloration arrangement of FIGURE 10 thus provides a strong visual cue that reinforces the coding sequences outlined in FIGURE 3, thereby helping the user to rapidly and accurately select the appropriate coding sequence for a given letter.

That is to say, the claimed color-coded layouts are significant in their own right in that they act as a visual guide to the user when implementing the two-key selection methodology that has been determined by the Patent Office to be patentable.

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Thus, Applicants find the rejection of Claim 10 to be particularly odd, since the Examiner has in effect taken the position that the two-key sequence invention disclosed and claimed by Applicants in US Patent 6,765,556 somehow becomes obvious as soon as a color-coded or pattern-coded enhancement to that invention is introduced. Is there really any other reason to color-code or pattern-code the keys and letters in the way indicated by the claim limitations of Claim 10 other than to guide the eye of the user when utilizing the corresponding, patented two-key selection method? And if not, then why would the subject matter of Claim 10 be obvious? One would think that if a particular two-key sequence methodology were patentable, then an arguably novel and non-obvious color-coded or pattern-coded arrangement that provided a significant enhancement in ease of use would also be patentable.

Claim 11

Claim 11 is likewise directed to an embodiment that includes a 3 x 3 matrix of keys, which is consistent with standard telephone and cellphone keyboards (an example of which is shown in Figure 8), as opposed to the keyboard of Stone. As noted above in connection with Claim 1, the methodology of Stone can not be applied to these embodiments, and so an obviousness rejection is inappropriate.

In view of the additional letters specified by the language of Claim 11, trying to apply the methodology of Stone to this claimed subject matter becomes even more strained.

Claim 1, the methodology of Stone can not be applied to these embodiments, and so an obviousness rejection is inappropriate.

Claims 16-17

Claims 16 and 17 are likewise directed to embodiments that include a 3 x 3 matrix of keys, which is consistent with standard telephone and cellphone keyboards (an example of which is shown in Figure 10), as opposed to the keyboard of Stone. As noted above in connection with Claim 1, the methodology of Stone can not be applied to these embodiments, and so an obviousness rejection is inappropriate.

In particular, Stone simply can not supply the needed disambiguation in the case that all the letters of the English alphabet are packed into a 3x3 matrix of numeral bearing keys (as in Applicants' Claims 16-17), nor can Stone be modified in any obvious way to accommodate so many letters packed into so few keys.

Claim 20

Claim 20 is directed to an embodiment that includes a 3 x 3 matrix of keys, which is consistent with standard telephone and cellphone keyboards (an example of which is shown in Figure 10), as opposed to the keyboard of Stone. As noted above in connection with Claim 1, the methodology of Stone can not be applied to these embodiments, and so an obviousness rejection is inappropriate.

Claim 21

Claim 21 is likewise directed to embodiments that include a 3 x 3 matrix of keys, which is consistent with standard telephone and cellphone keyboards (an example of which is shown in Figure 10), as opposed to the keyboard of Stone. As noted above in connection with Claim 1, the methodology of Stone can not be applied to these embodiments, and so an obviousness rejection is inappropriate.

In particular, Stone simply can not supply the needed disambiguation in the case that so many letters of the English alphabet are packed into a 3x3 matrix of numeral bearing keys (as in Applicants' Claim 21), nor can Stone be modified in any obvious way to accommodate so many letters.

Claim 22

The rejection of Claim 22 suffers from the shortcomings identified above in connection with Claim 21.

In addition, Claim 22 (like Claim 10) is directed to specific color-coded and pattern-coded arrangements (see page 13, line 9 through page 16, line 8 of the specification; see especially Figures 3 and 10). These particular arrangements are by no means arbitrary; rather, they complement certain preferred key entry sequence methodologies, which themselves were the subject of recently issued US Patent 6,765,556, which was based on an application having the same filing date, inventors, and assignee of the instant application. As noted on page 14, lines 2-5 of the specification of the pending application:

The coloration arrangement of FIGURE 10 thus provides a strong visual cue that reinforces the coding sequences outlined in FIGURE 3, thereby helping the user to rapidly and accurately select the appropriate coding sequence for a given letter.

That is to say, the claimed color-coded layouts are significant in their own right in that they act as a visual guide to the user when implementing the two-key selection methodology that has been determined by the Patent Office to be patentable.

Thus, Applicants find the rejection of Claim 22 to be particularly odd, since the Examiner has in effect taken the position that the two-key sequence invention disclosed and claimed by Applicants in US Patent 6,765,556 somehow becomes obvious as soon as a color-coded or pattern-coded enhancement to that invention is introduced. Is there really any other reason to color-code or pattern-code the keys and letters in the way indicated by the claim limitations of Claim 22 other than to guide the eye of the user when utilizing the corresponding, patented two-key selection method? And if not, then why would the subject matter of Claim 22 be obvious? One would think that if a particular two-key sequence methodology were patentable, then an arguably novel and non-obvious color-coded or pattern-coded arrangement that provided a significant enhancement in ease of use would also be patentable.

Claim 23

Claim 23 depends from Claim 13, and so all the arguments in favor of the patentability of Claim 13 also apply to Claim 23.

In addition, Claim 23 includes the limitation “wherein characters are selected by first selecting the key on which the character to be selected is displayed, and then selecting a key having a marking that matches the marking of the character to be selected”. As noted above in connection with Claim 1, Stone is not directed to sequential key selection and can not be made to work with sequential key selection.

Claim 24

Independent Claim 24 stipulates that the numerals 0-9 are displayed on respective keys, and that letters of the English alphabet are displayed on numeral-displaying keys. Claim 24 is directed to a method in which a particular two-key sequence is to be used, with this sequence being suggested by the color-coded or pattern-coded arrangement itself. Trying to apply Stone’s methodology to any such layout leads to problems with disambiguation like those discussed above in connection with Claim 1, because in general there will be at least a few keys with too many letters—Stone can not be used for disambiguation when too many letters are packed into a limited number of keys. When Claim 24 is properly viewed as a combination of elements, it is clear that the prior art does not render it obvious.

Claim 25

Independent Claim 25 also stipulates that the numerals 0-9 are displayed on respective keys, and that letters of the English alphabet are displayed on numeral-displaying keys. Claim 25 is directed to an apparatus in which a particular two-key sequence is to be used to input letters, with this sequence being suggested by the color-coded or pattern-coded arrangement itself. Once again, trying to apply Stone's methodology to any such layout leads to problems with disambiguation like those discussed above in connection with Claim 1, because in general there will be at least a few keys with too many letters—Stone can not be used for disambiguation when too many letters are packed into a limited number of keys. When Claim 25 is properly viewed as a **combination of elements**, it is clear that the prior art does not render it obvious.

Claim 26

Claim 26 should be patentable for at least the reasons set forth above in connection with Claim 25.

Claim 27

Claim 27 should be patentable for at least the reasons set forth above in connection with Claim 23.

Claim 31

Claim 31 depends from Claim 30, which should be patentable, as noted above. In addition, Claim 31 stipulates that "all the letters of the English alphabet are displayed on said numeral-displaying keys". Stone simply can not supply the needed disambiguation in the case that all the letters of the English alphabet are packed into a 3x3 matrix of numeral bearing keys, nor can Stone be modified in any obvious way to accommodate so many letters packed into so few keys.

Claim 32

Claim 32 is directed to a method (consistent with Figure 3) that uses a 3 x 3 matrix of keys, which is consistent with standard telephone and cellphone keyboards (an example of which is shown in Figure 10), as opposed to the keyboard of Stone. As noted above in connection with Claim 1, the methodology of Stone can not be applied to these embodiments, and so an obviousness rejection is inappropriate.

In addition, Claim 32 is directed to specific color-coded and pattern-coded arrangements (see page 13, line 9 through page 16, line 8 of the specification; see especially Figures 3 and 10). These particular arrangements are by no means arbitrary, rather, they complement certain preferred key entry sequence methodologies, which themselves were the subject of recently issued US Patent 6,765,556, which was based on an application having the same filing date, inventors, and assignee of the instant application. This point is discussed in more detail above in connection with Claims 10 and 22.

Claim 33

Claim 33 is directed to a method (consistent with Figure 7) that uses a 3 x 3 matrix of keys, as opposed to the keyboard of Stone. As noted above in connection with Claim 1, the methodology of Stone can not be applied to these embodiments, and so an obviousness rejection is inappropriate.

In addition, Claim 33 is directed to specific color-coded and pattern-coded arrangements (for example, see Figures 6 and 7). These particular arrangements are by no means arbitrary; rather, they complement certain preferred key entry sequence methodologies, which themselves were the subject of recently issued US Patent 6,765,556, which was based on an application having the same filing date, inventors, and assignee of the instant application. This point is discussed in more detail above in connection with Claims 10 and 22.

Claim 34

Claim 34 is directed to a device that uses a 3 x 3 matrix of keys, which is consistent with standard telephone and cellphone keyboards (an example of which is shown in Figure 10), as opposed to the keyboard of Stone. As noted above in connection with Claim 1, the methodology of Stone can not be applied to these embodiments, and so an obviousness rejection is inappropriate.

In addition, Claim 34 is directed to specific color-coded and pattern-coded arrangements (see page 13, line 9 through page 16, line 8 of the specification; see especially Figures 3 and 10). These particular arrangements are by no means arbitrary; rather, they

complement certain preferred key entry sequence methodologies, which themselves were the subject of recently issued US Patent 6,765,556, which was based on an application having the same filing date, inventors, and assignee of the instant application. This point is discussed in more detail above in connection with Claims 10 and 22.

Claim 35

Claim 35 depends from Claim 34 and specifies instructions for converting the “sequences 5, 4; 5, 5; and 5, 6 into the letters J, K, and L, respectively”. These particular sequences are shown in Figure 3.

Applicants are at a loss to see how the prior art could possibly render these sequences obvious, especially when viewed in combination with the color-coding limitations of Claim 34.

Claim 36

Claim 36 is directed to a method (consistent with Figure 3) that uses a 3 x 3 matrix of keys, which is consistent with standard telephone and cellphone keyboards (an example of which is shown in Figure 10), as opposed to the keyboard of Stone. As noted above in connection with Claim 1, the methodology of Stone can not be applied to these embodiments, and so an obviousness rejection is inappropriate.

In addition, Claim 36 is directed to specific color-coded and pattern-coded arrangements (see page 13, line 9 through page 16, line 8 of the specification; see especially Figures 3 and 10). These particular arrangements are by no means arbitrary; rather, they

Summary

Applicants note they are not claiming every conceivable color-coded or pattern-coded selection method or apparatus, and maintain that all the claim limitations should be read together as a combination.

In particular, Applicants believe that the Examiner has failed to explain how a color disambiguation arrangement that relies on the principle of the concurrent selection of two keys (i.e., Stone) could render obvious Applicants' completely different color disambiguation arrangement, which relies on the sequential selection of keys (and therefore allows greater flexibility in the placement of alphanumeric characters on the keys). Stone simply can not work or be made to work with the embodiments claimed by Applicants without changing Stone's principle of operation. Accordingly, Applicants' claimed apparatuses and method can not be properly regarded as obviousness modifications of the prior art, in accordance with MPEP 2143.01.

VIII. CLAIMS APPENDIX

1. (Previously presented) A method of electronically selecting language characters, comprising:

providing a keyboard that includes a plurality of keys, in which:

each of the numerals 0 through 9 inclusive is displayed on a respective one of the keys, each of at least 8 of the numeral-displaying keys further having language characters displayed thereon;

for each one of said 8 keys, a plurality of the characters displayed thereon have respective associated markings such that any given character marking on that key is uniquely identified with a single displayed character; and

a plurality of the keys display respective markings that visually match the character markings;

selecting a first character displayed on a first one of said 8 keys, wherein the first character has a first marking, by first selecting the first key with a user's finger or stylus and then selecting a key displaying the first marking with the user's finger or stylus; and

selecting a second character displayed on the first one of said 8 keys, wherein the second character has a second marking, by first selecting the first key and then selecting a key displaying the second marking, in which the selected key displaying the first marking and the selected key displaying the second marking are different.

2. (Original) The method of Claim 1, further comprising selecting a third character displayed on the first one of said 8 keys, wherein the third character has a third marking, by

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first selecting the first key and then selecting a key displaying the third marking, in which the selected keys displaying the first, second, and third markings are different.

3. (Original) The method of Claim 2, wherein the characters are letters of the English alphabet.

4. (Previously presented) The method of Claim 3, wherein each letter is selected by first selecting the key on which the selected letter is displayed, and then selecting a key displaying a marking that matches the marking of the selected letter.

5. (Original) The method of Claim 4, wherein 9 of the numeral-displaying keys are arranged as a 3 x 3 matrix of keys.

6. (Original) The method of Claim 5, wherein the key markings and the letter markings include various matching patterns.

7. (Previously presented) The method of Claim 5, wherein, for each one of said 8 keys, each letter displayed thereon has a marking of a different color.

8. (Original) The method of Claim 7, wherein the 3 x 3 matrix includes a first, a second, and a third row of keys, wherein:

the first row includes 3 keys displaying the numerals 1, 2, and 3, respectively;

the second row includes 3 keys displaying the numerals 4, 5, and 6,

respectively; and

the third row includes 3 keys displaying the numerals 7, 8, and 9,

respectively.

9. (Original) The method of Claim 8, wherein:

the numeral 2 key has the letters A, B, and C displayed thereon;

the numeral 3 key has the letters D, E, and F displayed thereon;
the numeral 4 key has the letters G, H, and I displayed thereon;
the numeral 5 key has the letters J, K, and L displayed thereon;
the numeral 6 key has the letters M, N, and O displayed thereon;
the numeral 7 key has the letters P, R, and S displayed thereon;
the numeral 8 key has the letters T, U, and V displayed thereon; and
the numeral 9 key has the letters W, X, and Y displayed thereon.

10. (Original) The method of Claim 9, wherein:

the letters A, D, G, J, M, P, T, W and the keys 1, 4, and 7 are marked with a first color;
the letters B, E, H, K, N, U and the keys 2, 5, and 8 are marked with a second color;
and
the letters C, F, I, L, O, V and the keys 3, 6, and 9 are marked with a third color, in which the first, second, and third colors are different from each other.

11. (Original) The method of Claim 10, wherein:

the letters Q and X are of the second color;
the letters R and Y are of the third color; and
the letters S and Z are of a fourth color.

12. (Original) The method of Claim 10, wherein the letters themselves are colored, and respective portions of the keys are colored.

said third row includes 3 keys displaying the numerals 7, 8, and 9, respectively.

18. (Original) The keyboard of Claim 13, wherein, on each of said 8 keys, each language character has a marking of a different color.

19. (Previously presented) The keyboard of Claim 18, wherein said language characters include letters of the English alphabet, said letters themselves are colored, and said keys have associated colors.

20. (Original) The keyboard of Claim 19, comprising a 3 x 3 matrix of a first, a second, and a third row of keys, wherein:

said first row includes 3 keys displaying the numerals 1, 2, and 3, respectively;

said second row includes 3 keys displaying the numerals 4, 5, and 6, respectively; and

said third row includes 3 keys displaying the numerals 7, 8, and 9, respectively.

21. (Original) The keyboard of Claim 20, wherein:

said numeral 2 key has the letters A, B, and C displayed thereon;

said numeral 3 key has the letters D, E, and F displayed thereon;

said numeral 4 key has the letters G, H, and I displayed thereon;

said numeral 5 key has the letters J, K, and L displayed thereon;

said numeral 6 key has the letters M, N, and O displayed thereon;

said numeral 7 key has the letters P, R, and S displayed thereon;

said numeral 8 key has the letters T, U, and V displayed thereon; and

said numeral 9 key has the letters W, X, and Y displayed thereon.

22. (Original) The keyboard of Claim 21, wherein:

said letters A, D, G, J, M, P, T, W and said keys 1, 4, and 7 are marked with a first color;

said letters B, E, H, K, N, U and said keys 2, 5, and 8 are marked with a second color; and

said letters C, F, I, L, O, V and said keys 3, 6, and 9 are marked with a third color, in which said first, second, and third colors are different from each other.

23. (Original) The keyboard of Claim 13, further including an electronic device in communication with said keyboard, said device registering which keys on said keyboard are selected, said device including instructions for converting sequences of two keys into language characters, wherein characters are selected by first selecting the key on which the character to be selected is displayed, and then selecting a key having a marking that matches the marking of the character to be selected.

24. (Previously presented) A method of electronically selecting letters, comprising: providing a keyboard that includes keys, the numerals 0-9 being displayed on respective keys organized in rows and columns, and letters of the English alphabet being displayed on numeral-displaying keys, wherein the letters displayed on any given key have different colors, and wherein keys of the keyboard are provided with letter-free regions having colors corresponding to the colors of the letters; and

selecting letters through a two-key sequence of a first key and a second key, in which the first key is given by the numeral-displaying key on which a desired letter is displayed, and the second key is given by a key provided with a letter-free region having a color that matches the color of the desired letter.

25. (Previously presented) An electronic device, comprising:

a keyboard that includes keys, the numerals 0-9 being displayed on respective keys organized in rows and columns, and letters of the English alphabet being displayed on numeral-displaying keys, wherein the letters displayed on any given key have different colors, and keys of the keyboard are color-coded with colors corresponding to the colors of the letters; and

an electronic component in communication with said keyboard, said component registering which keys on said keyboard are selected, said component including instructions for converting sequences of two keys into letters, wherein each letter is registered by first selecting the key on which the letter to be registered is displayed, and then selecting a key that is color-coded with a color matching that of the letter to be registered.

26. (Previously presented) A computer program product having program code thereon, the program code including the instructions of Claim 25.

27. (Previously presented) A computer program product having program code thereon, the program code including the instructions of Claim 23.

28. (Previously presented) The method of Claim 24, wherein 9 of said numeral-displaying keys are arranged as a 3 x 3 matrix of keys.

each of the letters C, F, I, L, O, V has a third color, and each of the keys 7, 8, and 9 has a letter-free region of the third color, in which the first, second, and third colors are different from each other.

34. (Previously presented) The device of Claim 30, said 3 x 3 matrix including a first, a second, and a third row of keys, wherein:

said first row includes 3 keys displaying the numerals 1, 2, and 3, respectively;

said second row includes 3 keys displaying the numerals 4, 5, and 6, respectively;

said third row includes 3 keys displaying the numerals 7, 8, and 9, respectively;

said numeral 2 key has the letters A, B, and C displayed thereon;

said numeral 3 key has the letters D, E, and F displayed thereon;

said numeral 4 key has the letters G, H, and I displayed thereon;

said numeral 5 key has the letters J, K, and L displayed thereon;

said numeral 6 key has the letters M, N, and O displayed thereon;

said numeral 7 key has the letters P, R, and S displayed thereon;

said numeral 8 key has the letters T, U, and V displayed thereon;

said numeral 9 key has the letters W, X, and Y displayed thereon;

each of said letters A, D, G, J, M, P, T, W has a first color, and each of said keys 1, 4, and 7 is color-coded with the first color;

each of said letters B, E, H, K, N, U has a second color, and each of said keys 2, 5, and 8 is color-coded with the second color; and

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each of said letters C, F, I, L, O, V has a third color, and each of said keys 3, 6, and 9 is color-coded with the third color, in which said first, second, and third colors are different from each other.

35. (Previously presented) The device of Claim 34, said instructions including converting the sequences 5, 4; 5, 5; and 5, 6 into the letters J, K, and L, respectively.

36. (Previously presented) The method of Claim 1, wherein the language characters include letters and each letter is selected by first selecting the key on which the selected letter is displayed, and then selecting a key displaying a marking that matches the marking of the selected letter, and wherein 9 of the numeral-displaying keys are arranged as a 3 x 3 matrix of keys that includes a first, a second, and a third row of keys, wherein:

- the first row includes 3 keys displaying the numerals 1, 2, and 3, respectively;
- the second row includes 3 keys displaying the numerals 4, 5, and 6, respectively;
- the third row includes 3 keys displaying the numerals 7, 8, and 9, respectively;
- the numeral 2 key has the letters A, B, and C displayed thereon;
- the numeral 3 key has the letters D, E, and F displayed thereon;
- the numeral 4 key has the letters G, H, and I displayed thereon;
- the numeral 5 key has the letters J, K, and L displayed thereon;
- the numeral 6 key has the letters M, N, and O displayed thereon;
- the numeral 7 key has the letters P, R, and S displayed thereon;
- the numeral 8 key has the letters T, U, and V displayed thereon;
- the numeral 9 key has the letters W, X, and Y displayed thereon;

each of the keys 1, 4, and 7 displays a first marking, and each of the letters A, D, G, J, M, P, T, W has the first marking;

each of the keys 2, 5, and 8 displays a second marking, and each of the letters B, E, H, K, N, U has the second marking; and

each of the keys 3, 6, and 9 displays a third marking, and each of the letters C, F, I, L, O, V has the third marking, in which the first, second, and third markings are different from each other.

37. (Previously presented) The keyboard of Claim 13, comprising a 3 x 3 matrix of a first, a second, and a third row of keys, wherein:

said first row includes 3 keys displaying the numerals 1, 2, and 3, respectively;

said second row includes 3 keys displaying the numerals 4, 5, and 6, respectively;

said third row includes 3 keys displaying the numerals 7, 8, and 9, respectively.

said numeral 2 key has the letters A, B, and C displayed thereon;

said numeral 3 key has the letters D, E, and F displayed thereon;

said numeral 4 key has the letters G, H, and I displayed thereon;

said numeral 5 key has the letters J, K, and L displayed thereon;

said numeral 6 key has the letters M, N, and O displayed thereon;

said numeral 7 key has the letters P, R, and S displayed thereon;

said numeral 8 key has the letters T, U, and V displayed thereon;

said numeral 9 key has the letters W, X, and Y displayed thereon;

each of said keys 1, 4, and 7 has a first marking, and each of the letters A, D, G, J, M, P, T, W has the first marking;

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each of said keys 2, 5, and 8 has a second marking, and each of the letters B, E, H, K, N, U has the second marking; and

each of said keys 3, 6, and 9 has a third marking, and each of the letters C, F, I, L, O, V has the third marking, in which said first, second, and third markings are different from each other.

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IX. EVIDENCE APPENDIX

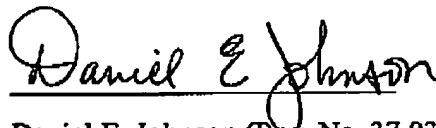
Not applicable.

X. RELATED PROCEEDINGS APPENDIX

Not applicable.

Respectfully submitted,

Eser Kandogan et al.

A handwritten signature in cursive script, reading "Daniel E. Johnson". The signature is written in black ink and is positioned above a horizontal line.

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PTO/SB/21 (08-00)

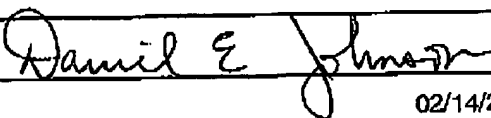
Approved for use through 10/31/2002. OMB 0651-0031

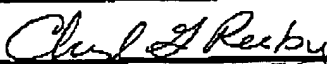
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TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	09/991,140
	Filing Date	11/16/2001
	First Named Inventor	Eser Kandogan et al.
	Group Art Unit	2635
	Examiner Name	T. Edwards
Total Number of Pages in This Submission	Attorney Docket Number	ARC920010111US1

ENCLOSURES (check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form <input checked="" type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment / Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an Application) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input checked="" type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosure(s) (please identify below):
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Effective on 12/01/2004
 Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818)

FEE TRANSMITTAL
For FY 2006

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT	(\$)	500.00
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Complete if Known

Application Number	09/991,140
Filing Date	November 16, 2001
First Named Inventor	Eser Kandogan et al.
Examiner Name	T. Edwards
Art Unit	2635
Attorney Docket No.	ARC920010111US1

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1. BASIC FILING, SEARCH, AND EXAMINATION FEES

FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Small Entity		Small Entity		Small Entity	
Application Type	Fee (\$)	Fee (\$)	Fee (\$)	Fee (\$)	Fee (\$)	
Utility	300	150	500	250	200	100
Design	200	100	100	50	130	65
Plant	200	100	300	150	160	80
Reissue	300	150	500	250	600	300
Provisional	200	100	0	0	0	0

2. EXCESS CLAIM FEES

Fee Description				Fee (\$)	Fee Paid (\$)
Each claim over 20 (including Reissues)				50	25
Each independent claim over 3 (including Reissues)				200	100
Multiple dependent claims				360	180
Total Claims				Multiple Dependent Claims	
$\text{Total Claims} - 20 \text{ or HP} = \frac{\text{Extra Claims}}{\text{Fee (\$)}} \times \text{Fee Paid (\$)}$				Fee (\$)	Fee Paid (\$)
HP = highest number of total claims paid for, if greater than 20.					
Indep. Claims				Multiple Dependent Claims	
$\text{Indep. Claims} - 3 \text{ or HP} = \frac{\text{Extra Claims}}{\text{Fee (\$)}} \times \text{Fee Paid (\$)}$				Fee (\$)	Fee Paid (\$)
HP = highest number of independent claims paid for, if greater than 3.					

3. APPLICATION SIZE FEE

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Total Sheets - 100 = _____ / 50 = _____ (round up to a whole number) x _____ = _____
Fees Paid (\$)

4. OTHER FEE(S)

OTHER FEE(S)
Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Appeal Brief

\$ 500.00

SUBMITTED BY

Signature Daniel E. Johnson

Registration No. 37,033
(Attorney/Agent)

Telephone 408-927-3367

Name (Print/Type)

Date February 14, 2006

Name (Print/Type) A. J. Miller, Jr. Patent

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TRANSMITTAL FORM
FEE TRANSMITTAL
APPELLANT'S APPEAL BRIEF

TOTAL NUMBER OF PAGES SUBMITTED INCLUDING COVER PAGE: 48

SERIAL NUMBER: 09/991,140

FILED: November 16, 2001

INVENTOR: Eser Kandogan et al.

DOCKET NUMBER: ARC920010111US1

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